

REMARKS

Claims 1-14 are pending in the application.

In the Official Action dated July 13, 2006, claims 1-14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Shouji '838 (US 5,691,838) in view of JP '375 (JP 10-101375).

This rejection is respectfully traversed.

Shouji et al. discloses ITO (indium tin oxide) powders and ATO (antimony tin oxide) powders as infrared blocking materials.

JP'375 discloses solar radiation shielding coating solutions prepared by dispersing fine particles of one or more kinds of ITO, ATO or AZO.

As described in the present specification, a composition including the ITO or ATO ultrafine powders(Background Art) is disadvantageous in that the transmissivity is relatively low within a near-infrared range with the wavelength of 1400nm or more, but the transmissivity is relatively high within the near-infrared range with the wavelength of 701 to 1399 nm, and thus, it is difficult to secure a desirable infrared blocking effect.

Further, in the case of using a powder mixture, containing ITO and ATO powders mechanically mixed with each other(Background Art), when a sufficiently large amount of ATO powder is used to compensate for problems caused by the ITO powder, the infrared blocking ability is reduced and the transmissivity is reduced at the visible ray wavelength range. On the other hand, when a small amount of ATO powder is mixed with the ITO powder, it is impossible to overcome the problems such as the chromaticity coordinate haze problem and the oxidation of the ITO powder under atmospheric air, occurring in use of the ITO powder.

With regard to the applied art, the claimed characteristics (IATO : Indium Antimony Tin Oxide) is realized by forming a mixture of an indium salt, an antimony salt, and a tin salt in a mixing ratio of 15 to 90 wt% : 1 to 20 wt% : 5 to 80 wt%, dissolving the mixture in water, adding a growth inhibitor and a basic solution into the water having the dissolved mixture to precipitate powder, rinsing the powder, drying the rinsed powder, and sintering the dried powder.

Both the Shouji et al. reference and the JP'375 reference do not disclose that indium, antimony, and tin are co-precipitated while being mixed with each other in a predetermined mixing ratio.

Further, JP'375 does not disclose that IATO powder can be produced without mechanically mixing.

If Shouji et al. is modified in view of JP'375, the result may be said to correspond to Comparative Examples 9 and 10 (mixed type) as described in Applicants' specification. In the Comparative Examples 9 and 10, the transmissivity of visible rays through the coated layer is 75 % or more, the transmissivity of infrared rays through the coated layer is 60 % or more at a wavelength of 1000 nm, the color purity of the coated layer is poor(4.8/5.7), and the acknowledgment quality of the coated layer is poor, in view of Examples 2-4 according to the cited references.

TABLE 1 (Present Specification page 32)

	No.	1Type.	2P.	3T.	4I.	XY chromaticity		5Pr.
						X	Y	
Ex.	2	IATO powder of the present invention (A)	75	75	82	0.3043	0.3281	18.2
	4	IATO powder of the present invention (B)	70	78	58	0.3109	0.3319	16.1
	6	IATO powder of the present invention (C)	78	82	37	0.3041	0.3278	14.5
Comparative Ex.	2	Reduced ITO powder (D)	65	81	38	0.3229	0.3416	3.2
	4	Reduced ITO powder (E)	73	75	35	0.3223	0.3427	3.4
	6	Oxidized ITO powder (F)	77	73	32	0.3223	0.3422	3.1
	8	Reduced ATO powder (G)	65	78	34	0.2833	0.3088	7.8
	9	Mixed type (7:3) ITO:ATO	75	75	37	0.3201	0.3371	4.8
	10	Mixed type (5:5) ITO:ATO	65	79	33	0.3031	0.3241	5.7

1Type.: type of powder

2P.: particle size (nm)

3T.: the transmissivity of visible rays through the coated layer (%)

4I.: blocking index of infrared rays (%) (at the wavelength of 1000 nm)

5Pr.: the color purity of the coated layer

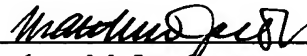
For the above reasons, it is considered that the rejections under 35 U.S.C 103(a) should be withdrawn because none of the applied prior art references, whether taken individually or in combination, teach or suggest the unobvious combination of features clearly recited in claims 1-14.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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